CHAPTER 15F

VENTILATING, AIR SUPPLY AND DISTRIBUTION SYSTEMS

15F-01 GENERAL

Since the ventilating system is largely dependent upon associated equipment, the QAR must closely coordinate this chapter with Chapters 15B, 15C, 15E, and 15G. The same importance of a thorough knowledge of job plans and specifications applies.

15F-02 EQUIPMENT

a. General

(1) It is the QAR*s responsibility, in concert with the quality control man, to determine that all equipment is approved well in advance of its actual need on the job.

(2) Check all equipment delivered to the site for conformance with approved shop drawings. Make sure the necessary rating and test certificates have been furnished.

(3) Closely examine material for any damages. Minor abrasions or rust spots must be cleaned and repainted to match original paint in appearance and in quality. Reject other damages.

(4) Be certain that approved vibration-isolators and flexible connections will be furnished as specified.

(5) Examine the mounting of each piece of equipment for secure installation.

(6) Check equipment for excess noise and vibration.

(7) Do not use dissimilar materials, especially screws, fasteners and flashings with different equipment bases and housing materials.

b. Fans and Air Handling Units

(1) Check rotation of fan before permanent power connection is made.

(2) Check method of drive. If belt driven, check means provided to adjust the motor.

(3) Check the type of motor enclosure.

(4) See that specified seals, sleeves and bearings are provided, and when lubricating type bearings are allowed provide accessibility for lubricating without dismantling fan or disconnecting duct.

(5) Provide a fire-safety switch on return air ducts of circulation systems.

(6) Check for pulley and belt alignment.

(7) See that adequate guards are provided for rotating equipment and belts.

(8) Check for installation of smoke detectors when required.

c. Power Roof Ventilators

(l) Provide service accessibility.

(2) Flashing at curbs must be water-tight.

(3) Discharged air is not to be directed toward air intakes.

(4) Check for required local disconnect switch.

d. Gravity Ventilators

(1) Examine installation for rigidity and weathertightness.

(2) Make sure units are oiled and properly adjusted.

(3) Check the actual freedom of rotation of the blades.

e. Dampers

(1) Backdraft dampers should be installed for each exhaust fan.

(2) Check the actual operation of the dampers. See that dampers do not rattle and that felt strips are provided for backdraft dampers.

(3) Assure that a separate frame is provided in openings on which the dampers will be mounted.

(4) Check for correct installation of fire dampers in accordance with SMACNA Fire Damper Guide.

f. Filters

(1) Make sure the proper type of filter is furnished and installed.

(2) Check thickness and method of mounting and supporting.

(3) Provide proper amount of adhesive and washing tank for viscous medium type filters.

(4) Inspect sealing strips.

(5) Provide accessibility for removal and replacement of filters.

(6) Assure that air stream is distributed uniformly over all filter areas.

(7) Observe electrostatic-type filters for operation of warning lights and door interlocks. Check ionizers for loose wires, sparking, and free access.

(8) Inspect automatic sprays for complete washing and spray coverage.

(9) On traveling screen type filters note the operation of screen and oil charge.

(10) On renewable roll media type filters inspect:

(a) Tracking of roll

(b) Media runout switch (c) Timer setting (d) Static pressure control

(a) Tension on media

(11) See that clean filters are installed upon completion of final tests.

(12) Check specifications regarding requirements for spare filters. This requirement is sometimes expressed as a percentage of the total of each kind required. Check on the transfer of the spares to the operating agency.

g. Screens

(1) Provide bird or insect screens if required.

(2) Check fabric material and installation of dissimilar materials.

(3) Check mesh size.

15F-03 DUCTWORK AND MECHANICAL INSULATION

See Section 15D for Ductwork. See Section 15C for Mechanical Insulation.

15F-04 DIFFUSERS. REGISTERS. AND GRILLES

(a) See that the contractor furnishes a schedule showing all air inlets and outlets.

(b) Inspect diffusers and registers for accessible volume control operator.

(c) Examine specification and installation for integral anti-smudge rings for diffusers.

(d) Check for loose or bent vanes.

(e) Inspect each item for fit, and see that sponge-rubber gaskets are provided when required.

(f) Inspect for the proper operation of registers, dampers, and grille directional-controls.

15F-05 BALANCING AND TESTING

General Check for any required certification of HVAC test and balance subcontractor/agent, prior to their arrival at site.

a. Cleaning and Adjusting

(1) All ducts, plenums and casings must be thoroughly cleaned of debris and blown free of small particles and dust before supply outlets are installed.

(2) Clean equipment of oil, dust, dirt, and paint spots.

(3) Replace sectional throwaway filters after ductwork is blown out and cleaned.

(4) Lubricate all bearings.

(5) Check tension on all belts and the adjustment of fan pulleys.

(6) Check that all fan and belt guards are in place.

(7) Install temporary filters for tasting purposes.

b. Testing

(1) Before insulating duct test it for air tightness.

(2) Contractor must provide necessary equipment for airflow measurements and coefficients for registers and diffusers.

(3) Review contractor*s method for recording test data, including comparison to the design air-flows.

(4) Test each outlet for the amount of air quantities required.

(5) Final air-flows must be recorded after all adjustments are made.

(6) If actual air flows result in objectional velocities or distribution, notify your supervisor.

(7) Check all dampers for proper operation.